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09/696,764	10/25/2000	Mark E. Epstein	6169-165	3128

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EXAMINER	
OPSASNICK, MICHAEL N	
ART UNIT	**PAPER NUMBER**
2655	

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/696,764	EPSTEIN, MARK E.	
	Examiner	Art Unit	
	Michael N. Opsasnick	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-51 rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al (5719997) in view of Wilson et al (6292779).

As per claims 1,39,43,48, Brown et al (5719997) teaches:

"a natural language understanding system comprising..... receiving text input" as grammar based recognition (col. 2 lines 11-20) and as speech input and other types of inputs (col. 1 lines 13-19; and phrase based inputs after the speech recognition process (col. 4 lines 27-34); as well as "a machine readable storage....steps of" as hardware and software (col. 3 lines 10-23)

"applying a first.....first CFG" as using context free grammars to generate the initial probabilistic score for word arcs (col. 11 lines 39-50);

"examining.....CFG" as updating and using a table of grammar node scores (col. 11 lines 48-65);

Although Brown et al (5719997) teaches the updating of a grammar node score table, Brown et al (5719997) does not explicitly teach an inventory or dictionary of queries with a score correlating directly to the grammar. However, Wilson et al (6292779) teaches a large vocabulary dictionary (abstract, col. 6 lines 13-47) teaching grammar related scores (col. 6 lines 18-21). Therefore, it would have been obvious to one of ordinary skill in the art of natural language word recognition to modify the scoring of Brown et al (5719997) with inventory or dictionary of queries with a score correlating directly to the grammar because it would advantageously allow for a single commercially available computer processor to perform the grammar processing (Wilson et al (6292779),col. 6 lines 24-27).

As per claim 2, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"comparing.....PCFG" as comparing each probability with a threshold (Brown et al (5719997), col. 11 lines 18-30) as applied to col. 9 lines 45-55);

As per claims 3-6,12-15,26-29,35-38, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches both terminal and non-terminal grammar rules (Brown et al (5719997), col. 11 lines 39-45);

As per claims 7,8, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"comprising iteratively.....input" as applying different probability CFG's (Brown et al (5719997), col. 11 lines 39-47), wherein during the propagation phase (Brown et al (5719997), col. 13 lines 45-55), scores of the words are updated (Brown et al (5719997), col. 13 lines 55-63), as well as back propagated (Brown et al (5719997), col. 14, lines 2-5; as well as col. 12 lines 1-6);

As per claim 9, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"said inventory.....NLU system" as hierarchy determined by the probability scores (Brown et al (5719997), col. 12 lines 50-60)

As per claims 10,11, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"examining.....CFG" as traceback processor proceeds thru the tree of candidate strings to produce the optimal string (Brown et al (5719997), col. 12 lines 1-6);

As per claim 16, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"a system.....text input" as grammar based recognition (Brown et al (5719997), col. 2 lines 11-20) and as speech input and other types of inputs (Brown et al (5719997), col. 1 lines 13-19; and phrase based inputs after the speech recognition process (Brown et al (5719997), col. 4 lines 27-34);

"at least one.....input" as using context free grammars to generate the initial probabilistic score for word arcs (Brown et al (5719997), col. 11 lines 39-50);

"an inventory of queries.....CFG" as updating and using a table of grammar node scores (Brown et al (5719997), col. 11 lines 48-65);

"wherein said at least....parse trees" as using context free grammars to generate the initial probabilistic score for word arcs (Brown et al (5719997), col. 11 lines 39-50);

"said inventory of queries....phrase" as updating and using a table of grammar node scores (Brown et al (5719997), col. 11 lines 48-65);

As per claim 17, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"wherein.....PCFG" as comparing each probability with a threshold (Brown et al (5719997), col. 11 lines 18-30) as applied to col. 9 lines 45-55);

As per claim 18, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"a system.....text input" as grammar based recognition (Brown et al (5719997), col. 2 lines 11-20) and as speech input and other types of inputs (Brown et al (5719997), col. 1 lines 13-19; and phrase based inputs after the speech recognition process (Brown et al (5719997), col. 4 lines 27-34);

"at least one context.....parse trees" as using context free grammars to generate the initial probabilistic score for word arcs (Brown et al (5719997), col. 11 lines 39-50);

"said features.....phrase" as phrase recognition (col. 4 lines 27-42)

As per claim 19, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"wherein.....PCFG" as comparing each probability with a threshold (Brown et al (5719997), col. 11 lines 18-30) as applied to col. 9 lines 45-55);

As per claim 20, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"a machine readable storage....steps of" as hardware and software (Brown et al (5719997), col. 3 lines 10-23)

"receiving input text" as grammar based recognition (Brown et al (5719997), col. 2 lines 11-20) and as speech input and other types of inputs (Brown et al (5719997), col. 1 lines 13-19; and phrase based inputs after the speech recognition process (Brown et al (5719997), col. 4 lines 27-34);

"applying.....CFG" as using context free grammars to generate the initial probabilistic score for word arcs (Brown et al (5719997), col. 11 lines 39-50);

"examining each.....CFG" as updating and using a table of grammar node scores (Brown et al (5719997), col. 11 lines 48-65);

As per claim 21, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"further comprising.....text input" as applying different probability CFG's (Brown et al (5719997), col. 11 lines 39-47), wherein during the propagation phase (Brown et al (5719997), col. 13 lines 45-55), scores of the words are updated (Brown et al (5719997), col. 13 lines 55-63), as well as back propagated (Brown et al (5719997), col. 14, lines 2-5; as well as col. 12 lines 1-6);

As per claims 22,44, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"wherein.....values" as comparing each probability with a threshold (Brown et al (5719997), col. 11 lines 18-30) as applied to col. 9 lines 45-55);

As per claim 23, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"inventory.....NLU system" as hierarchy determined by the probability scores (Brown et al (5719997), col. 12 lines 50-60);

As per claim 24, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"natural language....text input" as grammar based recognition (Brown et al (5719997), col. 2 lines 11-20) and as speech input and other types of inputs (Brown et al (5719997), col. 1 lines 13-19; and phrase based inputs after the speech recognition process (Brown et al (5719997), col. 4 lines 27-34);

"applying a first.....first CFG" as using context free grammars to generate the initial probabilistic score for word arcs (Brown et al (5719997), col. 11 lines 39-50);

"examining each.....CFG" as updating and using a table of grammar node scores Brown et al (5719997), (col. 11 lines 48-65);

As per claims 25,41,46, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches:

"comparing.....PCFG" as comparing each probability with a threshold (Brown et al (5719997), col. 11 lines 18-30) as applied to col. 9 lines 45-55);

As per claims 30,31,33,34,40,45,47-49, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches applying different probability CFG's (Brown et al (5719997), col. 11 lines 39-47), wherein during the propagation phase (Brown et al (5719997), col. 13 lines 45-55), scores of the words are updated (Brown et al (5719997), col. 13 lines 55-63), as well as back propagated (Brown et al (5719997), col. 14, lines 2-5; as well as col. 12 lines 1-6);

As per claim 32,42,47, the combination of Brown et al (5719997) in view of Wilson et al (6292779) teaches feature having a weight determined during training of said NLU (Brown et al (5719997), as weighting according to probabilistic scores – col. 12, lines 50-60).

Response to Arguments

3. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see related art listed on the PTO-892 form.

5. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231
or faxed to:
(703) 872 9314,
(for informal or draft communications, please label "PROPOSED" or "DRAFT")
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Opsasnick, telephone number (571)272-7623, who is available Tuesday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Mr. David Ometz, can be reached at (571)272-7593. The facsimile phone number for this group is (571)272-7629.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571)272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mno
5/24/05

Michael N. Opsasnick
Examiner
Art Unit 2655